**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1. (Original) A data storage system comprising:

a controller that reassigns a sector of data from an old logical block address (LBA) to a new logical block address (LBA) when a portion of a data storage medium corresponding to the old LBA contains a defect; and

a cycle redundancy check (CRC) engine that generates old cyclic redundancy check bytes based on the old LBA , performs a first exclusive OR (XOR) function on the old LBA and the new LBA, performs Galois Field multiplication on a result of the first XOR function, and performs a second XOR function on a result of the Galois Field multiplication and the old cyclic redundancy check bytes to generate updated cyclic redundancy check bytes that are based on the new LBA.

2. (Original) The data storage system as defined in claim 1 further comprising:

a memory buffer, wherein the CRC engine writes the updated cyclic redundancy check bytes to the memory buffer.

3. (Original) The data storage system as defined in claim 2 wherein the CRC engine stores the old cyclic redundancy check bytes in the memory buffer, and accesses the old cyclic redundancy check bytes from the memory buffer before performing the second XOR function.

4. (Original) The data storage system as defined in claim 1 wherein the sector of data contains 512 bytes and the old LBA contains 4 bytes.

5. (Original) The data storage system as defined in claim 1 wherein the old LBA and the new LBA are not written onto the disk.

6. (Original) The data storage system as defined in claim 1 wherein the controller controls a head that reads and writes data onto the disk.

7. (Original) The hard disk drive read channel chipset as defined in claim 6 wherein the controller is configured to store data onto a magnetic hard disk.

8. (Original) A method for updating cyclic redundancy check bytes for a sector of data to reflect a reassignment of the data from an old logical block address (LBA) to a new logical block address (LBA), the method comprising:

performing a first exclusive OR function on the old LBA and the new LBA to generate a first result;

performing Galois Field multiplication on the first result to generate a second result; and

performing a second exclusive OR function on the second result and old cyclic redundancy check bytes to generate updated cyclic redundancy check bytes that are based on the new LBA,

wherein the old cyclic redundancy check bytes are generated based on the old LBA.

9. (Original) The method according to claim 8 further comprising:

correcting errors in the data after the data has been assigned to the new LBA using the updated cyclic redundancy check bytes.

10. (Original) The method according to claim 8 wherein performing the second exclusive OR function on the second result and the old cyclic redundancy check bytes

further comprises performing an exclusive OR function on data bytes in the sector and zero bytes.

11. (Original) The method according to claim 8 further comprising:

writing the updated cyclic redundancy check bytes to a memory buffer.

12. (Original) The method according to claim 11 further comprising:

calculating the old cyclic redundancy check bytes based on the old LBA;

storing the old cyclic redundancy check bytes in the memory buffer; and

accessing the old cyclic redundancy check bytes from the memory buffer before performing the second exclusive OR function.

13. (Original) The method according to claim 8 wherein the sector of data is written to a magnetic hard disk.

14. (Original) The method according to claim 8 wherein the old LBA and the new LBA are not written onto the disk.

15. (Original) A disk drive error correction system comprising:

a cycle redundancy check (CRC) engine that generates old cyclic redundancy check bytes based on a first logic block address (LBA) for a sector of data, wherein the sector of data is reassigned from the first LBA to a second LBA;

a first XOR gate that performs a first exclusive OR (XOR) function on the old LBA and the new LBA;

circuitry for performing Galois Field multiplication on a result of the first XOR function; and

a second XOR gate for performing a second XOR function on a result of the Galois Field multiplication and the old cyclic redundancy check bytes to generate updated cyclic redundancy check bytes that are based on the second LBA.

16. (Original) The disk drive error correction system according to claim 15 further comprising:

a memory buffer, wherein the CRC engine writes the updated cyclic redundancy check bytes to the memory buffer.

17. (Original) The disk drive error correction system according to claim 15 wherein the sector of data is stored on a magnetic hard disk, and the disk drive error correction system interfaces with the hard disk drive host system.

18. (Original) The disk drive error correction system according to claim 15 wherein the second XOR gate performs an exclusive OR function on data bytes in the sector and zero bytes.

19. (Original) The disk drive error correction system according to claim 15 wherein the old LBA and the new LBA are not written onto the disk.

19. (Original) The disk drive error correction system according to claim 15 wherein the old LBA and the new LBA are not written onto the disk.

20. (New) The data storage system of claim 1 wherein performing the second XOR function on a result of the Galois field multiplication and the old cyclic redundancy check bytes further comprises performing an exclusive OR function on data bytes in the sector and zero bytes.

21. (New) The disk drive error correction system of claim 15 wherein performing the second XOR function on a result of the Galois field multiplication and the old cyclic redundancy check bytes further comprises performing an exclusive OR function on data bytes in the sector and zero bytes.